1878MNRAS..38..249.

ADDRESS.

Delivered by the President, Mr. Huggins, on Presenting the Gold Medal of the Society to Baron Dembowski.

Before giving effect to the award of your Council by the formal presentation of the Medal to Baron Dembowski through the hands of our Foreign Secretary, you will permit me to place before you, in a few words, some of the considerations which induced your Council to bestow upon Baron Dembowski this high mark of their consideration.

It may be, perhaps, the more necessary on the present occasion for your President to make a statement of the grounds upon which the selection of your Council was based, because the work of your Medallist has not been of that original and remarkable character which carries within itself obvious justification for the highest honour which can be conferred upon it. When I say this, do not suppose me to admit that such work as that with which Baron Dembowski has enriched Astronomy is less deserving of honour and reward than are those direct and definite additions to our knowledge which we call discoveries. As in the case of a perfect building no wise man would attempt to apportion the relative values of the different parts, so in Science the deep foundations of accumulated measures and data are not less necessary, to say the least, than are the arches and pillars and towers of brilliant discoveries, upon which, doubtless, the glances of the mere passers by chiefly fall. It is as the diligent and laborious hewer and layer of the foundation stones of accurate measures and data that I desire to present the claims of your Medallist of to-day.

With untiring energy and a zeal which has never failed, he has pursued for twenty-five years that part of Astronomy which he at first selected as most completely within his power of accomplishing, the micrometrical remeasurement of the stars of the *Dorpat Catalogue*. Such steady work so faithfully persevered in never fails of success nor of reward.

The goddess of truth is always to be won by the worshipper who brings the three gifts, accuracy, energy, and perseverance. These are the gifts which your Medallist pre-eminently has placed in the service of our science and which have won for him most rightly the award of our Medal.

You will not think that I speak too strongly when I remind

1878MNRAS..38..249.

you, that notwithstanding that his instrument, of the very moderate aperture of five inches, was unprovided with clock motion, and had not even a position circle attached to it, he boldly at once undertook a revision of the brighter stars of the *Dorpat Catalogue*, and made up for the deficiencies of his instrument by his own skill so successfully that his measures, taken under these unfavourable circumstances, have come to be acknowledged by all workers in the same field as worthy of the greatest confidence. His energy and perseverance in the diligent pursuing of this one thing has enriched science with a long connected series of measures which are strictly comparable among themselves and extend without a break over a period of twenty-five years. May I venture to remark that it is, in my opinion, such quiet unobtrusive work which it is pre-eminently the duty of the Council, from time to time, to seek out and to honour. Great discoveries bring their own reward in the general attention and recognition which they at once claim and obtain for those who make them. But those who labour among the foundations in the accumulation of measures for other men to build upon are often but insufficiently remembered and honoured. In conferring upon Baron Dembowski the honour of which he has made himself so abundantly worthy, your Council wished at the same time to bestow a mark of encouragement upon the class of workers represented by your Medallist, who are content to pass their lives in quiet, accurate work, seeking no applause from the outside world of men, and eager only to lay their foundation stones truly plumbed and squared.

I ought not to omit to mention that the mode of publication of his observations adopted by Baron Dembowski, though it rendered his measures at once available to other workers, is unfavourable to a due appreciation of the magnitude of his work. If all his observations, which are now scattered through some seventy numbers of the *Astronomische Nachrichten*, were to be collected in one volume, the catalogue would not be unworthy to stand beside the most valued and extensive catalogues of double stars which we possess.

The first published work of Baron Dembowski appeared in the *Memorie della Reale Accadēmia delle Scienze*, Naples, 1857. The same communication in French is to be found in the *Astronomische Nachrichten*, Nos. 999–1125.

This work consists of micrometrical measures of 127 double and triple stars selected from Struve's *Dorpat Catalogue*. The measures are preceded by an introduction, which contains a description of the instruments and methods of observation. The telescope was a dialyte of Plössl of 5 inches aperture and 5 feet focal length, mounted equatoreally, but unprovided with clock motion, and the position circle, which forms usually an essential part of the measuring apparatus. The reader is not surprised to meet with the remark that the moving of the hour circle by hand while the measures were made was often very

1878MNRAS..38..249.

difficult and sometimes painfully irksome. Should I incur much risk of being mistaken if I were to hazard the suggestion that these very difficulties, by the skill and perseverance which they developed to overcome them, contributed in some degree to the high quality of Baron Dembowski's work? Such severe training in the surmounting of serious instrumental difficulties is favourable to the formation of a masterly power and accuracy which is not always to be found among observers who possess from the first, ready to hand, every luxury of instrumental aid.

In the absence of a position circle Baron Dembowski made use of a simple practical method to find the angles of position from the points of intersection of the stars by their diurnal motion with the wires of the micrometer fixed at right angles to the moving wire. In speaking of his measures of distance, Baron Dembowski says: "Of 82 stars in which Struve did not recognise any sensible change of distance, my measures are in the mean about 0″·08 larger than those of the *Dorpat Catalogue.*" Each measure in distance in the catalogue is the mean of 10 measures taken on the same day, and each measure of position is the mean of 5 independent measures on the same night.

The great care bestowed by Baron Dembowski to obtain the utmost accuracy possible under the circumstances in his measures may be illustrated by the following remarks in reference to angles of position: "In finding parallelism I invariably followed the direction of Struve by observing with the head in a vertical position. In some cases, when the angle between the imaginary line joining the components, and the vertical is more than 30°, I have verified the measures in three positions of the head, vertical, parallel to the line joining the components and perpendicular to the same." Baron Dembowski has added in the Catalogue a column containing the angle formed by the line joining the stars with the vertical.

This paper was followed by a communication to the *Astronomische Nachrichten* in 1859 (Nos. 1185–1209), which contains the completion of his re-examination of the *Lucidæ* of the *Dorpat Catalogue*, with the exception of those which were not within the reach of the instrumental means he then possessed.

In 1860 he contributed to the *Astronomische Nachrichten* the mean positions of 52 double stars taken at Naples between December 1855 and May 1858. These positions were obtained with a meridian circle of Starke, of 14 inches diameter, read with four microscopes, and provided with a telescope of 50 inches focal distance and 42 lines aperture.

Argelander made use of these observations in his "Untersuchungen uber die Eigenbewegungen von 250 Sternen," in volume 7 of the *Bonner Beobachtungen.*

In 1864 a new series of measures of 180 of the principal double stars of the *Dorpat Catalgoue*, including all those in which Dembowski suspected change, appeared in the *Astronomische Nachrichten* (No. 1473). He was now in the possession of a much

1878MNRAS..38..249.

more powerful instrument, and one in every respect adapted to his line of work, a refractor by Mertz of great optical excellence, 7 inches in aperture, and provided with clockwork and a suitable micrometer and position circle.

The earnestness with which Baron Dembowski sought to attain the greatest precision possible to him in his measures comes forcibly into view in the following sentence from his introduction to this new series of measures:—

"Among the numerous causes of inaccuracy in measures of position, I ought to mention one which exists in my own case, and which, so far as I know, is new. This source of error exists in the differences which I have often found in the values of the same angle according to the direction in which the position circle is rotated to bring the wires to parallelism with the line joining the two stars. I have often found that a position of the wires which was at the time considered satisfactorily parallel was in reality towards the side from which the movement of rotation was given."

On this account, Baron Dembowski made it a rule to take an even number of measures with the circle alternately moving in opposite directions. He makes the suggestion that this peculiarity of judgment, which may be stronger in some observers than in others, may be one of the causes which contribute to the want of agreement in the angles of position of the same objects at the same epoch among the measures of different observers. Mr. Dawes states, in the introduction to his Catalogue of Double Stars, that he had detected in himself the same tendency of his eye to accommodate its judgment to the position of the wires before they had been quite brought up to the right point. He then says: "I was much interested in some remarks on this subject by that excellent and indefatigable double-star observer, Baron Dembowski.

In the *Astronomische Nachrichten*, 1866 (No. 1572), Dembowski gives a further series of measures of about 150 stars.

Again, three years later, in a communication to the *Astronomische Nachrichten* (Nos. 1735, 1736), he brings to completion his revision of the *Dorpat Catalogue*, leaving not more than 64 stars out of the 2,641 stars of the Catalogue, which for various reasons he had not been able satisfactorily to measure. Baron Dembowski adds: "This result is the highest praise that can be given to the excellence of Mertz's object-glass." May we not even more justly say that it is at the least an evidence as remarkable of the skill and zeal of the observer?

Our Medallist did not, on the completion of the task he had set himself, rest from his labours; for, in the following year, we have another series of measures of some of the principal double stars, and also a first series of measures of stars from the *Pulkowa Catalogue* (*Astronomische Nachrichten*, 1798–1832).

This was followed by other measures which appeared in the *Astronomische Nachrichten* (1886–1888).

1878MNRAS..38..249.

In 1873 Baron Dembowski communicated to the *Astronomische Nachrichten* (1936) an elaborate determination of the value in arc of the revolutions of his micrometer.

A further series of measures of the principal double stars, and of 8 new double stars, made during the years 1872 and 1873, are contained in No. 1979 of the *Astronomische Nachrichten* (March 1874).

In July of the following year (*Astronomische Nachrichten*, No. 2045) Baron Dembowski calls attention to the remarkable changes which have occurred in the triple star 503 of Sir James South's list. He thinks there can be no doubt of the identity of this object with his double star Pulkowa 124. In this case the movement of—

AB in 49·5 years will be $-32''\!\cdot\!4$ and $-14^\circ\!\cdot\!7$,

AC in 50·1 years will be $+28''\!\cdot\!3$ and $-\ \ 1^\circ\!\cdot\!6$.

The measures taken of the principal double stars during the years 1874 and 1875 were communicated to the *Astronomische Nachrichten* in 1876 (Nos. 2076–2086). This series includes also measures of 33 stars of Mr. Burnham's Catalogue which do not exceed 20° of south declination.

Lord Lindsay—May I ask you to convey this Medal to Baron Dembowski, with the assurance of our high appreciation of his accurate and long-continued work, and of our earnest wish that he may have health still to continue his labours for many years to come.

T